

Safety Data Sheet

According to HCS-2012 APPENDIX D TO §1910.1200

Version: 1.1/EN
Product name: LITHIUM-MANGANESE BUTTON CELL

Revision date: 09/29/2013
Printing date: 02/09/2015

1. Identification

(a) Product identifier

Product name: LITHIUM-MANGANESE BUTTON CELL
Product code: CR632 CR816 CR920 CR927 CR1025 CR1130 CR1212 CR1216 CR1220 CR1225 CR1530
CR1616 CR1620 CR1625 CR1632 CR2012 CR2016 CR2020 CR2025 CR2030 CR2032
CR2050 CR2320 CR2325 CR2330 CR2332 CR2354 CR2430 CR2450 CR2477 CR3032

(b) Other means of identification

Product description: Nominal Voltage: 3.0V
Ampere-hour: 210mAh
Lithium content: 0.053g

(c) Recommended use of the chemical and restrictions on use

Recommended use: Battery for low power consumption electronic products, like electronic watch, electronic calendar, calculator, computer motherboard, electronic toy, small electronic gifts, etc.
Restriction on use: No information available.

(d) Details of the supplier of the product

Company name(China) JINTAN CHAOCHUANG BATTERY CO., LTD.
Address: XiYang Industrial Zone ,Xuebu Town, JinTan City, JiangSu Province, China
E-mail: marvelous@chaochuang.com
Telephone: +86-519-82483588
+86-519-82485336

(e) Emergency phone number

+86-519-82483588

2. Hazard(s) identification

(a) Classification of the chemical

The batteries are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. A sealed Li-metal Battery is not hazardous in normal use.

(b) Label elements

Pictogram(s): No pictogram.
Signal word: No signal word.
Hazard statements: No hazard statement.
Precautionary statements: No precautionary statement.

(c) Description of any hazards not otherwise classified

In case of mistreatment (abusive over charge, reverse charge, external short circuit...) and in case of fault some electrolyte can leak from the cell through the safety device. In these cases refer to the risk of the electrolyte. Contact with internal components may cause irritation or severe burns. Irritating to eyes, respiratory system, and skin. The electrode materials are only hazardous, if the materials are released by mechanical damaging of the cell or if exposed

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to fire.

Skin touch: Contact with battery electrolyte may cause burns and skin irritation.

Eyes touch: Contact with battery electrolyte may cause burns. Eye damage is possible.

Inhalation: Inhalation of a large number of vapors or fumes released due to heat may cause respiratory.

Ingestion: Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.

(d) Ingredient with unknown acute toxicity

No information available.

3. Composition/information on ingredients

(a) Mixtures information

Chemical name	CAS No.	Concentration Range %	Typical Concentration %
Stainless steel	12597-68-1	35.68%-59.96%	45.2%
Polypropylene	9003-07-0	2.56%-7.45%	5.4%
Manganese dioxide	1313-13-9	21.84%-41.33%	30%
Poly(tetrafluoroethylene)	9002-84-0	1.19%-1.80%	1.6%
Graphite	7782-42-5	1.19%-1.80%	1.5%
Lithium metal	7439-93-2	1.57%-3.25%	2.8%
Lithium perchlorate	7791-03-9	2.63%-2.70%	2.7%
Propylene carbonate	108-32-7	2.07%-5.26%	4.8%
1,2-Dimethoxyethane	110-71-4	1.14%-5.26%	5.2%
Silicon dioxide	14808-60-7	0.43%-0.89%	0.8%

4. First-aid measures

(a) Description of first aid measures

Inhalation: Internal components: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice / attention if you feel unwell.

Skin contact: Internal components: Remove contaminated clothes and rinse the skin with plenty of water. Get medical advice / attention if you feel unwell.

Eye contact: Internal components: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing. Get medical advice / attention if you feel unwell.

Ingestion: Internal components: Have victim drink 60 to 240 mL (2-8 oz.) of water. And DO NOT induce vomiting. Get medical aid.

(b) Most important symptoms/effects, acute and delayed

Contact with internal components may cause allergic skin sensitization (rash) and irritate eyes, skin, nose, throat, respiratory system.

(c) Immediate medical attention and special treatment

No information available.

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5. Fire-fighting measures

(a) Extinguishing media

Suitable extinguishing media: Use foam, dry powder or dry sand, CO₂ as appropriate.
Unsuitable extinguishing media: No information available.

(b) Special hazards arising from the chemical

Under fire conditions, batteries may burst and release hazardous decomposition products when exposed to a fire situation. This could result in the release of flammable or corrosive materials. Hazardous combustion products: CO, CO₂, Metal oxides, Irritating fumes

(c) Special protective equipment and precautions for fire-fighters

Firefighters must wear fire resistant protective equipment and appropriate breathing apparatus. The staff must equip with filtermask (full mask) or isolated breathing apparatus. The staff must wear the clothes which can defense the fire and the toxic gas. Put out the fire in the upwind direction. Remove the container to the open space as soon as possible. Spray water on the containers in the fireplace to keep them cool until finish extinguishment.

6. Accidental release measures

(a) Personal precautions, protective equipment and emergency procedures

If the battery material is released, remove personnel from area until fumes dissipate. Provide maximum ventilation to clear out hazardous gases. The preferred response is to leave the area, dispose the case after the batteries cool and vapors dissipate. Provide maximum ventilation. Avoid skin and eye contact or inhalation of vapors.

(b) Methods and materials for containment and cleaning up

If battery casing is dismantled, small amounts of electrolyte may leak. Collect all released material in a plastic lined container. Dispose off according to the local law and rules. Avoid leached substances to get into the earth, canalization or waters.

7. Handling and storage

(a) Precautions for safe handling

Always follow the warning information on the batteries and in the manuals of devices. Only use the recommended battery types. Keep batteries away from children. For devices to be used by children, the battery casing should be protected against unauthorized access. Unpacked batteries shall not lie about in bulk. In case of battery change always replace all batteries by new ones of identical type and brand. Do not swallow batteries. Do not throw batteries into water. Do not throw batteries into fire. Avoid deep discharge. Do not short-circuit batteries Use recommended charging time and current.

(b) Conditions for safe storage, including any incompatibilities

Do not storage Battery haphazardly in a box or drawer where they may short-circuit each other or be short-circuited by other metal objects. Keep out of reach of children.

8. Exposure controls/personal protection

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(a) Control parameters

Not established.

(b) Appropriate engineering controls

Under normal conditions (during charge and discharge) release of ingredients does not occur.

(c) Personal protective equipment

Respiratory protection:	No personal respiratory protective equipment normally required. In case of inadequate ventilation wear respiratory protection.
Hand protection:	Wear protective gloves.
Eye/face protection:	No personal protective equipment normally required.
Skin/body protection:	Wear protective clothing to prevent contact.

9. Physical and chemical properties

(a) Appearance	Silvery button cell; Solid
(b) Odor	Odorless
(c) Odor threshold	Not available.
(d) pH	7.0
(e) Melting point/freezing point	Not available.
(f) Initial boiling point and boiling range	Not available.
(g) Flash point	Not applicable.
(h) Evaporation rate	Not applicable.
(i) Flammability	Non flammable.
(j) Upper/lower flammability or explosive limits	Not available.
(k) Vapor pressure	Not applicable.
(l) Vapor density	Not available.
(m) Density	2.3-3.16 g/cm ³
(n) Solubility(ies)	Insoluble in water.
(o) Partition coefficient: n-octanol/water	Not available.
(p) Auto-ignition temperature	Not available.
(q) Decomposition temperature	Not available.
(r) Viscosity	Not available.

10. Stability and reactivity

(a) Reactivity

Stable under recommended storage and handling conditions.

(b) Chemical stability

Stable under normal conditions.

(c) Possibility of hazardous reactions

When heated the risk of rupture may occur. Due to special safety construction, rupture implies controlled release of pressure without ignition.

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(d) Conditions to avoid

Do not subject battery to mechanical shock. Keep away from open flames, high temperature.

(e) Incompatible materials

Strong oxidizer, strong acid.

(f) Hazardous decomposition products

No information available.

11. Toxicological information

(a) Information on the likely routes of exposure

Inhalation: Inhalation of a large number of vapors or fumes released due to heat may cause respiratory.

Ingestion: Ingestion of battery contents may cause mouth, throat and intestinal burns and damage.

Skin contact: Contact with battery electrolyte may cause burns and skin irritation.

Eye contact: Contact with battery electrolyte may cause burns. Eye damage is possible.

Under normal conditions (during charge and discharge) release of ingredients does not occur. If accidental release occurs see information in section 2, 3, and 4. Swallowing of a battery can be harmful. Call the local Poison Control Centre for advice and follow-up.

(b) Information on toxicological characteristics

Acute toxicity: No data available.

Skin corrosion/irritation: The liquid in the battery irritates.

Serious eye damage/irritation: The liquid in the battery irritates.

Respiratory sensitization: The liquid in the battery may cause sensitization to some person.

skin sensitization: The liquid in the battery may cause sensitization to some person.

Carcinogenicity: No data available.

Germ Cell Mutagenicity: No data available.

Reproductive Toxicity: No data available.

STOT-Single Exposure: No data available.

STOT-Repeated Exposure: No data available.

Aspiration Hazard: No data available.

12. Ecological information

(a) Ecotoxicity

No information available.

(b) Persistence and Degradability

No information available.

(c) Bioaccumulative potential

No information available.

(d) Mobility in soil

No information available.

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(e) Other adverse effects

No information available.

13. Disposal considerations

(a) Safe handling and methods of disposal

Disposal should be in accordance with applicable regional, national and local laws and regulations.
Local regulations may be more stringent than regional or national requirements.

14. Transport information

According to the packaging instruction 967 section II of IATA DGR 56th Edition for transportation.
According to the packaging provision 188 of IMDG or the Recommendation on the Transportation of Dangerous Goods-Model Regulation (18th).
The products are not subjects to dangerous.

(a) UN number	Not regulated as dangerous goods
(b) UN Proper shipping name	Not regulated as dangerous goods
(c) Transport hazard class(es)	Not regulated as dangerous goods
(d) Packing group (if applicable)	Not regulated as dangerous goods
(e) Marine pollutant (Yes/No)	No
(f) Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code)	No information available.
(g) Special precautions	No information available.

15. Regulatory information

(a) Safety, health and environmental regulations specific for the product in question

CAS No.	USA TSCA	EU EINECS	Japan ENCS	Korea ECL	China IECSC	Canada DSL/NDSL
12597-68-1	Not listed	Not listed	Not listed	Not listed	Listed	Not listed
9003-07-0	Listed	Not listed	Listed	Listed	Listed	Listed
1313-13-9	Listed	Listed	Listed	Listed	Listed	Listed
9002-84-0	Listed	Not listed	Listed	Listed	Listed	Listed
7782-42-5	Listed	Listed	Not listed	Listed	Listed	Listed
7439-93-2	Listed	Not listed	Listed	Listed	Listed	Listed
7791-03-9	Listed	Listed	Listed	Listed	Listed	Listed
108-32-7	Listed	Listed	Listed	Listed	Listed	Listed
110-71-4	Listed	Listed	Listed	Listed	Listed	Listed
14808-60-7	Listed	Listed	Listed	Listed	Listed	Listed

Remark: The above-mentioned search results are based on the Non-Confidential Inventory.

16. Other information, including date of preparation or last revision

(a) Preparation and revision information

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Date of previous revision: 02/09/2015

Date of this revision: 09/29/2013

Revision summary: The first revision.

(b) Abbreviations and acronyms

TSCA:	Toxic Substances Control Act, The American chemical inventory.
DSL/NDSL	Domestic Substances List/Non-Domestic Substances List
EINECS:	European Inventory of Existing Commercial chemical Substances
ENCS	Japanese Existing and New Chemical Substances
ECL:	Existing Chemicals List, the Korean chemical inventory.
IECSC:	Inventory of existing chemical substances in China.

(c) Disclaimer

Because all of our batteries are defined as "articles", they are exempted from the requirements of the Hazard Communication Standard. The information in this SDS is provided all the relevant data fully and truly. However, the information is provided without any warranty on their absolute extensiveness and accuracy. This SDS was prepared to provide safety preventive measures for the users who have got professional training. The personal user who obtained this SDS should make independent judgment for the applicability of this SDS under special conditions. In these special cases, we do not assume responsibility for the damage.

----- End of the SDS -----



浙江野马电池有限公司
ZHEJIANG MUSTANG BATTERY CO.,LTD.

MATERIAL SAFETY DATA SHEET

LR03 AAA (STANDARD) ALKALINE BATTERY 1.5V

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: LR03 AAA (STANDARD) ALKALINE BATTERY 1.5V

Manufacturer: ZHEJIANG MUSTANG BATTERY Co.,LTD

Add: No.818,Rongji Road, Luotuo, Zhenhai, Ningbo, China

Fax: 0086-574-86593227

Emergency Phone: 0086-574-86593207

2. Information on Ingredients

Product Nature:LR03 AAA (STANDARD) ALKALINE BATTERY 1.5V

Ingredient	Concentration	CAS No.	EC No.
Manganese Dioxide	35.0%	1313-13-9	215-202-6
Zinc	15.5%	7440-66-6	231-175-3
Potassium hydroxi	5.0%	1310-58-3	215-181-3
Graphite	2.4%	7782-42-5	231-955-3

3.Hazards identification

Hazards Identification: The battery is not restricted to IATA DGR according to special provision A123 and is not restricted to IMDG CODE according to special provision 304.

Emergency Overview: Avoid contact and inhalation the internal materials. Emit toxic fumes under fire conditions.

4. First-aid measures

Skin Exposure: If the internal battery materials of an opened battery cell come into contact with the skin,immediately flush with plenty of water.

Eye Exposure: In case of contact with eyes , flush with copious amounts of water for at least 15 minuters.Assure adequate flushing by separating the eyelids with fingers.Call a physician.

Inhalation Exposure: If potential for exposure to nickel fumes or dusts occurs,remove immediately to fresh air and seek medcial attention.

Oral Exposure: If swallowed,do not induce vomiting. Seek immediate medical attention.

5.Fire-fighting measures

Extinguishing Media: Suitable:Dry chemical,Carbon dioxide and appropriate foam.

Firefighting:

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific hazards: Emit toxic fumes under fire conditions.

6.Accidental release measures

Procedures of personal precautions:

Exercise appropriate precautions to minimize direct contact with skin and eyes.

Methods for cleaning up:

Sweep up with spade, place into a dry, clean, lidded container for disposal.Avoid raising dust.Ventilate area and wash spill site after material pickup is complete.



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14. Transport information

IATA: Not restricted to IATA DGR according to special provision A123.

IMO: Not restricted to IMDG CODE according to special provision 304.

15. Regulatory information

Manganese Dioxide Battery is unregulated for purpose of transportation by U.S. Department of Transportation(DOT), International Civil Aviation Administration (ICAA), International Air Transport Association (IATA) and the International Maritime Dangerous Goods regulations (IMDG).

The only DOT requirement for shipping these batteries is Special Provision 130 which states: "Batteries, dry, are not subject to the requirements of this subchapter only when they are offered for transportation in a manner that prevents the dangerous evolution of heat (for example, by the effective insulation of exposed terminals)."

The only requirements for shipping these batteries by ICAO and IATA is Special Provision A123 which states: "An electrical battery or battery powered device having the potential of dangerous evolutions of heat that is not prepared so as to prevent a short-circuit (e.g. in the case of batteries, by the effective insulation of xeposed terminals; or in the case of equipment, by disconnection of the battery and protection of exposed terminals) is forbidden from transportation."

The International Maritime Dangerous Goods Code(IMDG) regulate them for ocean transportation under Special Provision 304 which says: "Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is craked are not subject to the provisions of this Code provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are: alkaline-manganese, zinc-carbon, nickel metal hydride and nickel-cadmium batteries".

The requirements for shipping these batteries, in all modes of transportation, are that they be separated from each other to prevent short-circuits. And to prevent movement that could lead to short-circuits. Products must also be packed in strong packaging that can withstand the rigors normal to transportation.

16. Other information

Other Information

The MSDS is prepared in accordance with ISO 11014-1:1994.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising from using the above information.